



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,475	04/15/2005	Dirk Inze	BJS-4982-3	1234

23117 7590 10/09/2007
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

COLLINS, CYNTHIA E

ART UNIT	PAPER NUMBER
----------	--------------

1638

MAIL DATE	DELIVERY MODE
-----------	---------------

10/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,475

Applicant(s)

INZE ET AL.

Examiner

Cynthia Collins

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18-20, 22-24, 26, 28-35, 38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) 5-9, 18-20, 22-24, 26, 28-35, 38 and 39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 82007.41505
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-4 and 10-16 directed to SEQ ID NO:1835, which is believed to correspond to alleged separately patentable invention Group No. 1835, in the reply filed on July 23, 2007 is acknowledged. Claims 5-9, 18-20, 22-24, 26, 28-35, 38 and 39, and the nonelected sequences, are withdrawn from consideration as being directed to nonelected inventions.

Specification

The abstract of the disclosure is objected to because it is not directed to the elected invention. Correction is required. See MPEP § 608.01(b).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

Claims 1-4 and 10-16 are objected to because of the following informalities: the claims are directed in part to nonelected sequences. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 and 10-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims require modified expression of one or more nucleic acids and/or modified level and/or activity of one or more proteins, said nucleic acid and/or protein being essentially similar to SEQ ID NO:1835. It is unclear how a protein can be essentially similar to SEQ ID NO:1835, as proteins comprise an amino acid sequence, and SEQ ID NO:1835 is a nucleotide sequence.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 is directed to a transgenic plant obtainable by the method of claim 1. It is unclear how one would obtain a transgenic plant by this method, as the method does not employ transgenic technology, nor does it produce transgenic plants.

Claims 1-4, 10-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The claimed method requires modifying, in a plant, expression of one or more nucleic acids and/or modifying level and/or activity of one or more proteins, which nucleic acids and/or proteins are essentially similar to SEQ ID NO:1835, including a method comprising

Art Unit: 1638

overexpression of one or more nucleic acids essentially similar to SEQ ID NO:1835, and a method comprising downregulation of expression of one or more nucleic acids essentially similar to SEQ ID NO:1835. The claimed methods omit, however, a step(s) reciting the technical means causing the modification of the expression of one or more nucleic acids and/or modifying level and/or activity of one or more proteins, which nucleic acids and/or proteins are essentially similar to SEQ ID NO:1835, a step(s) reciting the technical means causing the overexpression of one or more nucleic acids essentially similar to SEQ ID NO:1835, and a step(s) reciting the technical means causing the downregulation of expression of one or more nucleic acids essentially similar to SEQ ID NO:1835.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10 and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim J.C. et al. (A novel cold-inducible zinc finger protein from soybean, SCOF-1, enhances cold tolerance in transgenic plants. Plant J. 2001 Feb;25(3):247-59).

The claims are drawn to a method to alter one or more plant characteristics, said method comprising modifying, in a plant, expression of one or more nucleic acids and/or modifying level and/or activity of one or more proteins, which nucleic acids and/or proteins are essentially similar to SEQ ID NO:1835 and wherein said one or more plant characteristics are altered

Art Unit: 1638

relative to corresponding wild type plants, including a method wherein said altered plant characteristic is selected from any one or more of the following: altered development, altered growth, increased yield and/or biomass, enhanced survival capacity, enhanced stress tolerance, altered plant architecture, altered plant physiology, altered plant biochemistry, altered metabolism, altered DNA synthesis, altered DNA modification, altered endoreduplication, altered cell cycle, altered cell wall biogenesis, altered transcription regulation, altered signal transduction, altered storage lipid mobilization and/or altered photosynthesis, each relative to corresponding wild type plants, including a method wherein said altered metabolism comprises altered nitrogen and/or altered carbon metabolism, including a method wherein said increased yield and/or biomass comprises increased seed yield, including a method comprising overexpression of one or more nucleic acids essentially similar to SEQ ID NO:1835.

The claims are also drawn to a transgenic plant having one or more altered characteristics when compared to the corresponding wild-type plant, characterized in that said plant has modified expression of one or more nucleic acids and/or modified level and/or activity of one or more proteins, said nucleic acid and/or protein being essentially similar to SEQ ID NO:1835.

The claims are further drawn to a transgenic plant obtainable by a method according to claim 1, a transgenic plant comprising an isolated nucleic acid and/or protein sequence essentially similar to SEQ ID NO:1835, an ancestor, progeny, or any plant part, particularly a harvestable part, of a transgenic plant of claim 12, and a host cell having one or more altered characteristics when compared to the corresponding wild-type host cell, characterized in that said host cell has modified expression of one or more nucleic acids and/or modified level and/or

Art Unit: 1638

activity of one or more proteins, said nucleic acid and/or protein being essentially similar to SEQ ID NO:1835.

Kim J.C. et al. teach a method comprising overexpressing in a plant a SCOF-1 encoding nucleic acid, wherein one or more plant characteristics are altered relative to corresponding wild type plants, including a method wherein said altered plant characteristic is enhanced cold stress tolerance (page 250 Figures 4 and 5; page 251 paragraph spanning columns 1 and 2; page 256). The SCOF-1 encoding nucleic acid taught by Kim J.C. et al. is essentially similar to SEQ ID NO:1835 because i) a search of prior art databases indicates that SEQ ID NO:1835 is the same as GenBank Accession No. AF250337, the *Arabidopsis thaliana* zinc finger protein AZF2 (AZF2) mRNA, complete cds (see attached sequence alignment between SEQ ID NO:1835 and GenBank Accession No. AF250337), and because ii) in being a family member of plant two-fingered Cys2/His2-type zinc-finger genes and proteins (Sakamoto H. et al. Expression of a subset of the *Arabidopsis* Cys(2)/His(2)-type zinc-finger protein gene family under water stress. Gene. 2000 May 2;248(1-2):23-32, see page 28 Figure 2), SCOF-1 is a homologue of AZF2. While Kim J.C. et al. are silent with respect to whether nitrogen and/or carbon metabolism are altered, and with respect to whether seed yield is increased, Kim J.C. et al. need not explicitly teach these limitations in order to anticipate the claimed invention, because the alterations of the plant characteristics recited in the claims are a consequence of overexpressing the nucleic acid, and are thus inherent to the method.

Kim J.C. et al. also teach transgenic plants and their parts produced by their method, wherein said transgenic plants comprise and overexpress a SCOF-1 encoding nucleic acid, and wherein said transgenic plants have enhanced cold stress tolerance relative to corresponding wild

Art Unit: 1638

type plants (page 250 Figures 4 and 5; page 251 paragraph spanning columns 1 and 2; page 256).

Kim J.C. et al. additionally teach non-plant host cells modified to express a plant SCOF-1

encoding nucleic acid (page 256 column 1 2d full paragraph; page 257 column 1 1st paragraph).

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Iida A. et al. (A zinc finger protein RHL41 mediates the light acclimatization response in *Arabidopsis*. Plant J. 2000 Oct;24(2):191-203).

The claims are drawn to a method to alter one or more plant characteristics, said method comprising modifying, in a plant, expression of one or more nucleic acids and/or modifying level and/or activity of one or more proteins, which nucleic acids and/or proteins are essentially similar to SEQ ID NO:1835 and wherein said one or more plant characteristics are altered relative to corresponding wild type plants, including a method comprising downregulation of expression of one or more nucleic acids essentially similar to SEQ ID NO:1835.

Iida A. et al. teach a method comprising downregulating the expression in a plant of a RHL41 encoding nucleic acid, wherein one or more plant characteristics are altered relative to corresponding wild type plants, including a method wherein said altered plant characteristic is decreased tolerance to high irradiation (page 196 Figure 5; page 201 column 1 2d full paragraph). The RHL41 encoding nucleic acid taught by Iida A. et al. is essentially similar to SEQ ID NO:1835 because i) a search of prior art databases indicates that SEQ ID NO:1835 is the same as GenBank Accession No. AF250337, the *Arabidopsis thaliana* zinc finger protein AZF2 (AZF2) mRNA, complete cds (see attached sequence alignment between SEQ ID NO:1835 and GenBank Accession No. AF250337), and because ii) in being a family member of

Art Unit: 1638

plant two-fingered Cys2/His2-type zinc-finger genes and proteins (Iida A. et al. page 193 column 1 1st full paragraph; page 195 Figure 2), RHL41 is a homologue of AZF2.

Remarks

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (571) 272-0794. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cynthia Collins
Primary Examiner
Art Unit 1638

Cynthia Collins
9/30/07

CC